



CONSULTATION DOCUMENT

PUBLIC CONSULTATION ON NETLINK TRUST'S INTERCONNECTION OFFER

4 May 2022

PUBLIC CONSULTATION ON NETLINK MANAGEMENT PTE LTD'S (AS TRUSTEE OF NETLINK TRUST) ("NETLINK TRUST") INTERCONNECTION OFFER

INTRODUCTION

1. The Nationwide Broadband Network ("**NBN**") is of strategic importance to drive Singapore's economic and productivity growth. Since the implementation of NBN, there has been increased dependence on NetLink Trust's fibre infrastructure for business communications and transactions, home entertainment and social engagement throughout the day. This is especially so during the period of the COVID-19 pandemic as end-users were working from home or having home-based learning. Moving forward, such hybrid home-based working or learning arrangements are likely to continue.
2. Under the NetCo Interconnection Code ("**Code**"), NetLink Trust's Interconnection Offer ("**ICO**") will generally be reviewed every five (5) years. The last review of NetLink Trust's ICO was completed in 2017. IMDA is therefore initiating another round of review of the ICO.
3. NetLink Trust has submitted its proposed changes to the ICO as outlined below. NetLink Trust's proposed changes include its self-initiated changes to address operational issues and to ensure that its service offerings and procedures are up-to-date, and changes required by IMDA. For instance, IMDA has been engaging NetLink Trust on various measures to minimise inconvenience to end users during NetLink Trust's planned maintenance. This includes NetLink Trust aligning its maintenance period with that of the Requesting Licensees ("**RL**") and Retail Service Providers to reduce disruptions to the end users to the extent feasible, and giving RLs an avenue to feedback and request change of dates.

REVIEW OF NETLINK TRUST'S ICO FOR NBN MANDATED SERVICES

4. NetLink Trust submitted its proposed changes to its ICO schedules for NBN Mandated Services. The revised ICO schedules are as follows:
 - (a) Existing schedules to the ICO:
 - Main Body of the ICO;
 - Schedule 1 Residential End-User Connection;
 - Schedule 2 Non-Residential End-User Connection;

Schedule 3	NBAP Connection;
Schedule 4	CO to CO Connection;
Schedule 5	CO to Building MDF Room Connection;
Schedule 6	Building MDF Room to FTTB Node Connection;
Schedule 7	FTTB Node to DP Connection;
Schedule 8	Building MDF Room to Residential Premise Connection;
Schedule 9	Building MDF Room to Non-Residential Premise Connection;
Schedule 10	CO to NBAP DP Connection;
Schedule 11	NBAP DP to NBAP TP Connection;
Schedule 12	Co-location Service;
Schedule 12B	Co-Location Supplementary Cooling Service;
Schedule 12C	Co-Location Space & Service in new Co-Location Room;
Schedule 15	Charges;
Schedule 16	Billing;
Schedule 18	Dictionary;

(b) New proposed schedules to the ICO:

Schedule 22	Central Office Diversity Connection; and
Schedule 23	Point-to-Point Connection.

A summary of the key proposed changes to the ICO schedules is tabulated in the enclosed Appendix.

REVIEW OF NETLINK TRUST'S ICO FOR INTERCONNECTION RELATED SERVICES ("IRS")

5. Under the Code of Practice for Competition in the Provision of Telecommunication and Media Services 2022 (also known as the Telecom and Media Competition Code, or the "TMCC"), NetLink Trust's reference interconnection offers for IRS will be reviewed every five (5) years. NetLink Trust's reference interconnection offers for IRS has been incorporated into its ICO since 26 June 2020. While still within the five (5)-year period of the previously approved ICO Schedules for IRS, IMDA will review the ICO schedules for IRS at the same time as the review of NetLink Trust's ICO for NBN Mandated Services. This will align the review cycle of all of NetLink Trust's ICO schedules.
6. NetLink Trust proposed amendments to the charges relating to Schedule 19 for the purpose of providing clarity in its ICO. The proposed changes are summarised in the enclosed Appendix.

Common Service Ducts ("CSD")¹

7. IMDA designated CSDs as an Essential Service Facility under IRS in the TMCC in 2022. As required under Section 6 of the TMCC, NetLink Trust shall offer CSD services to Facilities-based Operators ("FBO") through a reference interconnection offer. Accordingly, NetLink Trust has submitted a new ICO schedule for CSD services, as well as any consequential amendments to other ICO schedules to give effect to the CSD ICO. The relevant ICO schedules are as follows:
 - (a) New proposed schedule to the ICO:
 - Schedule 21 Licensing of CSD or Duct Space and/or Access to Associated Telecom Manholes;
 - (b) Existing schedules to the ICO:
 - Main Body of the ICO;
 - Schedule 15 Charges; and
 - Schedule 18 Dictionary.

¹ CSD is a common set of ducts and manholes that may be singly or jointly built, owned and maintained by Public Telecommunication Licensees, designated to serve an area where access or road openings are limited. CSDs are designed for shared use by multiple Facilities-based Licensees to house telecommunication cables for the deployment of telecommunication networks.

8. IMDA would like to also provide clarity to the industry on pricing methodology for the CSD services. Specifically for the long-term lease of duct, i.e., committed duct by FBOs during the designated CSD owner’s polling, the pricing will be based on construction costs of the CSD and allocated proportionately by the number of ducts for the CSD. For clarity, this will be on a case-by-case basis, dependent on the construction costs of each CSD. Payment schedule for the long-term lease is specified in Clause 1.6 of the proposed draft Schedule 21. The long-term lease will be for a tenure of 35 years based on an indefeasible right of use. For the short-term lease of the set-aside ducts and manhole access, the pricing will be determined by IMDA via the cost-based pricing methodology. For the avoidance of doubt, IMDA will audit the prices for both the long- and short-term leases to make sure they are cost-based, but will not be consulting on the prices of the leases.

REQUEST FOR COMMENTS

9. The revised ICO schedules for NBN Mandated Services and IRS will collectively be referred to as the “**Draft Revised ICO**”. IMDA hereby invites interested parties to submit written comments regarding the Draft Revised ICO.
10. IMDA requests that comments be presented in the following format:
 - (a) Description of the respondent and its interest in the proceedings;
 - (b) Summary of the respondent’s position;
 - (c) General comments; and
 - (d) Views regarding specific provisions of the Draft Revised ICO.
11. In all comments, respondents should identify the specific provisions of the Draft Revised ICO (by paragraph/section number, where provided) to which comments are made. Where appropriate, respondents may suggest additional or alternative language, provided always that any such suggestions should be accompanied by an explanation of the reason for the proposal. All respondents are requested to keep their comments clear and succinct.
12. All views and comments should be submitted in writing in soft copy (Microsoft Word and PDF format), and should reach IMDA by **12 noon, 3 June 2022**. All views and comments should be addressed to:

Ms Aileen Chia
Deputy Chief Executive (Connectivity Development & Regulation)
Director-General (Telecoms and Post)
Infocomm Media Development Authority
10 Pasir Panjang Road
#03-01 Mapletree Business City
Singapore 117438

AND

Please submit the soft copy of your views and comments, with the email header “Public Consultation on NetLink Trust’s Interconnection Offer”, via email to consultation@imda.gov.sg.

13. IMDA reserves the right to make public all or parts of any written submissions made in response to this consultation, and to disclose the identity of the source. Respondent may request confidential treatment for any part of the submission that the respondent believes to be proprietary, confidential or commercially sensitive, with supporting justification for IMDA’s consideration. In such cases, the submission must be provided in a non-confidential form suitable for publication, with any confidential information redacted as necessary and placed in a separate annex.
14. If IMDA grants confidential treatment, it will consider, but will not publicly disclose, the information. If IMDA rejects the request for confidential treatment, it will return the information to the part that submitted it and will not consider the information as part of its review. As far as possible, parties should limit any request for confidential treatment of information submitted. IMDA will not accept any submission that requests confidential treatment for all, or a substantial part, of the submission.

NETLINK TRUST – KEY PROPOSED CHANGES FOR ICO SCHEDULES FOR NBN MANDATED SERVICES

S/N	Area	NetLink Trust 's Proposed Changes
1	Billing of fault rectification cost	<p><u>Current Situation</u></p> <p>Requesting Licensees (“RL”) raise trouble tickets for fault rectification to NetLink Trust. NetLink Trust will charge the End User (“EU”) directly for any repair and replacement charges.</p> <p><u>NetLink Trust’s Proposed Change</u></p> <p>NetLink Trust proposed for the fault rectification cost to be billed to RLs instead of the EU.</p> <p>NetLink Trust is of the view that the proposed billing arrangement is consistent with current practices; and will result in better efficiency and less inconveniences to the EU.</p> <p>NetLink Trust explained that the Retail Service Provider (“RSP”) is the de-facto single point-of-contact for the EU for the following services:</p> <ul style="list-style-type: none"> (a) Subscription of fibre broadband service (with or without Termination Point (“TP”) Installation); (b) Reporting of disruption or unavailability of fibre broadband service; and (c) Request for TP Relocation, Repair and Replacement, or Removal (“TP RRR”) service. <p>Under the current set-up, the request for fibre service activation or TP RRR service is submitted to NetLink Trust directly by the RL. Any charges incurred by NetLink Trust are billed to the RL according to the procedures specified in the ICO. There is no contractual relationship between NetLink Trust and the EU.</p> <p>NetLink Trust does not have a contractual relationship with the EU for fault rectification as well. Where the EU encounters any service difficulty with his/her fibre broadband service, the first (and only) party that the EU contacts is his/her RSP. Upon receipt of the fault report form the RSP, where applicable, the RL will submit a trouble ticket to NetLink Trust to perform fault investigation. The current process of billing EUs directly for the fault rectification cost</p>

S/N	Area	NetLink Trust 's Proposed Changes																					
		<p>is thus an anomaly to the current set-up.</p> <p>In relation to efficiency of the current billing arrangement, NetLink Trust has encountered instances where EUs were confused (and frustrated at times) when NetLink Trust billed the EU the fault rectification cost because the RSPs had told the EUs that the fault rectification cost would be borne by the RSPs. However, such information was not passed down to NetLink Trust from the RLs in the trouble ticket. Unnecessary additional administrative work for all parties involved was created as NetLink Trust had to look into the complaint filed by the EU, void the bill to EU and switch the billing to the RL.</p>																					
2	Enhanced Fibre Take Over ("EFTO")	<p>Current Situation</p> <p>There are two (2) options for fibre takeover – the Fibre Take Over ("FTO") process and the EFTO.</p> <p>For information, the difference between EFTO and FTO is summarised in the table below:</p> <table border="1" data-bbox="528 746 2033 1321"> <thead> <tr> <th data-bbox="528 746 779 790"></th> <th data-bbox="779 746 1328 790">FTO</th> <th data-bbox="1328 746 2033 790">EFTO</th> </tr> </thead> <tbody> <tr> <td data-bbox="528 790 779 833">Installation Day</td> <td data-bbox="779 790 1328 833">T+9 onwards</td> <td data-bbox="1328 790 2033 833">T+5 onwards</td> </tr> <tr> <td data-bbox="528 833 779 1013">Installation Slot</td> <td data-bbox="779 833 1328 1013"> <ul style="list-style-type: none"> • 1 hour 45 mins slot • Coordinated installation (both NLT and RSP staff must be on site together) </td> <td data-bbox="1328 833 2033 1013"> <ul style="list-style-type: none"> • Hourly slot • Sequential installation (RSP/RL can arrange for NLT to perform job in the morning while RSP install the ONT at RU's premise in the afternoon) </td> </tr> <tr> <td data-bbox="528 1013 779 1102">Approval Cut Off Time</td> <td data-bbox="779 1013 1328 1102">RLs to approve by T+5, 11.59pm. Else NLT will deem order as rejected</td> <td data-bbox="1328 1013 2033 1102">RLs to reject by T+3, 12pm. Else NLT will deem order as approved</td> </tr> <tr> <td data-bbox="528 1102 779 1192">Notification</td> <td data-bbox="779 1102 1328 1192">NIL</td> <td data-bbox="1328 1102 2033 1192">Broadcast email will be sent to the existing RSP, existing RL and new RL</td> </tr> <tr> <td data-bbox="528 1192 779 1281">Closing of Order</td> <td data-bbox="779 1192 1328 1281">NLT will close the order within the installation day</td> <td data-bbox="1328 1192 2033 1281">NLT will close the order within the installation hour</td> </tr> <tr> <td data-bbox="528 1281 779 1321">Consent Form</td> <td data-bbox="779 1281 1328 1321">NIL</td> <td data-bbox="1328 1281 2033 1321">EU to sign consent form at EFTO application process</td> </tr> </tbody> </table>		FTO	EFTO	Installation Day	T+9 onwards	T+5 onwards	Installation Slot	<ul style="list-style-type: none"> • 1 hour 45 mins slot • Coordinated installation (both NLT and RSP staff must be on site together) 	<ul style="list-style-type: none"> • Hourly slot • Sequential installation (RSP/RL can arrange for NLT to perform job in the morning while RSP install the ONT at RU's premise in the afternoon) 	Approval Cut Off Time	RLs to approve by T+5, 11.59pm. Else NLT will deem order as rejected	RLs to reject by T+3, 12pm. Else NLT will deem order as approved	Notification	NIL	Broadcast email will be sent to the existing RSP, existing RL and new RL	Closing of Order	NLT will close the order within the installation day	NLT will close the order within the installation hour	Consent Form	NIL	EU to sign consent form at EFTO application process
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S/N	Area	NetLink Trust 's Proposed Changes
		<p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to remove EFTO process because there is no demand for EFTO from the industry. There has not been any EFTO order since July 2016. The FTO Process will continue to be available to RLs.</p>
3	Personal Data Protection	<p><u>Current Situation</u> There are no clauses relating to personal data in order submission in the ICO.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to include personal data protection provisions in the ICO to ensure that each party comply with their respective obligations under the relevant personal protection and privacy laws in force in Singapore.</p> <p>In addition, in the event that any unnecessary personal data has been submitted to NetLink Trust in connection with any order request or fault reporting, NetLink Trust proposed to impose a one-time charge for the removal of unnecessary personal data from NetLink Trust's records.</p>
4	Planned Service Interruption Hours for Residential End-User Connections	<p><u>Current Situation</u> The planned service interruption hours for Residential End-User Connections in ICO schedule 1 is between 9am and 6pm.</p> <p><u>NetLink Trust's Proposed Change</u> IMDA had previously consulted NetLink Trust's RLs on the change in planned service interruption hours for Residential End-User Connections. IMDA has decided to change the said planned service interruption hours to "between 1am and 6am", with exceptions. Should any of the exceptions are met, NetLink Trust can carry out the planned service interruption in the day between 9am to 6pm.</p> <p>NetLink Trust has included the amendments to ICO Schedule 1 to reflect IMDA's decision.</p>

S/N	Area	NetLink Trust 's Proposed Changes
5	NetLink Trust's Notification to RLs on Planned Service Interruption for Residential End-User Connections, Non-Residential End-User Connections and NBAP Connections	<p><u>Current Situation</u></p> <p>The current notification process does not allow RLs to feedback to NetLink Trust and request for changes to planned service maintenance dates. As currently drafted in the ICO, the date of planned interruption is solely decided by NetLink Trust and communicated to RLs.</p> <p><u>NetLink Trust's Proposed Change</u></p> <p>As required by IMDA, NetLink Trust proposed amendments such that RLs will be given an avenue to feedback and request for change of dates of the planned interruptions to Residential End-User Connections, Non-Residential End-User Connections and NBAP Connections, and NetLink Trust will give due consideration to the extent feasible. To the extent feasible, NetLink Trust will align its maintenance period with that of the RLs and RSPs to reduce disruptions to the end users.</p>
6	Seasonal Slots for Residential End-User Connections	<p><u>Current Situation</u></p> <p>The Seasonal Slots are slots for Residential End-User Connections in excess of the Maximum Quota, applicable only during seasonal increases in demand during events such as the quarterly IT fairs. Other additional slots such as the 5th installation slot and service activation slots (Installation only) on Saturdays for Residential End-User Connections are offered through NetLink Trust's tariff.</p> <p><u>NetLink Trust's Proposed Change</u></p> <p>NetLink Trust proposed to amend its offer such that the 5th installation slot and service activation slots (Installation only) on Saturdays for Residential End-User Connections will be offered under the ICO as Seasonal Slots and not through its tariffs. NetLink Trust will notify RLs of the availability of such slots through the Seasonal Slots Notification.</p>

S/N	Area	NetLink Trust 's Proposed Changes
7	Planned Service Interruption Hours for non-residential connections	<p><u>Current Situation</u> The planned service interruption hours for non-residential connections in ICO schedules 2 to 11 are between 1am and 6am.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to amend the planned service interruption hours for non-residential connections from "between 1am and 6am" to "between 12am and 6am" as it requires more time for its maintenance work.</p>
8	Cable standard for Outdoor Installations	<p><u>Current Situation</u> The cable standard for outdoor installation in ICO is ITU-T G.652D.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to update the cable standard for outdoor installations to ITU-T G.652D and ITU-T G.657A to reflect ground implementation.</p>
9	Timeframe for request for optical power reading	<p><u>Current Situation</u> RLs can request for optical power reading for any completed orders.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to include a timeframe of 30 Business Days after completion orders for which the RL may request for the optical power readings. This is to ensure that the information received by the RL is current and up-to-date.</p>
10	Non-Standard Installation Materials or Non-Standard Deployment Techniques	<p><u>Current Situation</u> No provision for use of non-standard installation materials or deployment techniques in ICO.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust received requests from RLs for use of non-standard installation materials or deployment techniques. Hence, it proposed to make clear the charging mechanism for request for use of non-standard installation materials or deployment techniques in the ICO.</p>

S/N	Area	NetLink Trust 's Proposed Changes
11	Quotation workflow under Schedule 9	<p><u>Current Situation</u> Schedule 9 includes a quotation workflow for Installation Charge.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to remove the quotation workflow because it is no longer required after the modification of the one-time installation charge to a fixed-sum charge during the price review exercise in 2017.</p>
12	Fault Investigation Charge in Schedules 12 and 12C	<p><u>Current Situation</u> There is no fault investigation charge in Schedules 12 and 12C.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust has received requests from RLs for its contractors to be present during investigation of co-location issues or faults. NetLink Trust proposed to impose a Fault Investigation Charge if NetLink Trust's contractor is required to be present during investigation of co-location issues or faults.</p> <p>For the avoidance of doubt, the Fault Investigation Charge will not be imposed if the fault is determined to be caused solely by NetLink Trust.</p>
13	Site Preparation and Installation Charge in Schedule 12B	<p><u>Current Situation</u> There is no Site Preparation and Installation Charge in Schedules 12B. However, NetLink Trust has been providing quotations to RLs outside ICO for activation of cooling hats or relocation of existing cooling hats.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to include this charge in the ICO for clarity as the Site Preparation and Installation Charge for Co-Location Supplementary Cooling Service is currently not reflected in Schedule 15.</p>

S/N	Area	NetLink Trust 's Proposed Changes
14	Licence Renewal Process in Schedules 12 and 12C	<p><u>Current Situation</u> Licence renewal process in Schedules 12 and 12C is different from that in Schedule 12B due to a review of Schedule 12B.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to align the licence renewal process in Schedules 12 and 12C to the revised process adopted for Schedule 12B.</p>
15	Hardcopy Invoices in Schedule 16	<p><u>Current Situation</u> Under Schedule 16, NetLink Trust will email the invoices to RLs, followed by a hardcopy invoice via ordinary post. NetLink Trust had proposed to RLs in 2020 to cease hardcopy invoice due to the Circuit Breaker during the COVID-19 pandemic.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed to amend Schedule 16 to remove hardcopy invoice via ordinary post to reflect the implementation of this on the ground.</p>
16	Central Office Diversity Connections	<p><u>Current Situation</u> Service is not provided under ICO. RLs procure the service from NetLink Trust through a customised agreement.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed a new Schedule 22 for provision of Central Office Diversity Connections.</p>
17	Point-to-Point Connections	<p><u>Current Situation</u> Service is not provided under ICO. RLs procure the service from NetLink Trust through a customised agreement.</p> <p><u>NetLink Trust's Proposed Change</u> NetLink Trust proposed a new Schedule 23 for provision of Point-to-Point Connections.</p>

NETLINK TRUST - KEY PROPOSED CHANGES FOR ICO SCHEDULES FOR IRS

S/N	Area	NetLink Trust’s Proposed Changes
1	Administrative Charge in Schedule 19	<p><u>Current Situation</u> Under Schedule 19, RLs must pay an Administrative Charge for processing withdrawal of any request. However, the charge is not reflected in Schedule 15.</p> <p><u>NetLink Trust’s Proposed Change</u> NetLink Trust proposed to include this charge item in Schedule 15 for clarity.</p>
2	Charge for Removal of Underground Equipment in Schedule 19	<p><u>Current Situation</u> Under Schedule 19, in the event that a RL does not remove its Underground Equipment due to a withdrawal request, unauthorised installation of Underground Equipment or upon expiry or termination of a Licence, NetLink Trust may remove the Underground Equipment and the RL must pay for all reasonable cost associated with its removal. However, the charge is not reflected in Schedule 15.</p> <p><u>NetLink Trust’s Proposed Change</u> NetLink Trust proposed to include this charge item in Schedule 15 for clarity.</p>
3	Common Service Ducts (“CSD”) services	<p><u>Current Situation</u> CSD was designated as an Essential Service Facility under Interconnection Related Services in the TMCC. NetLink Trust is required under TMCC to offer CSD services to FBOs through a reference interconnection offer.</p> <p><u>Proposed Change</u> NetLink Trust proposed a new Schedule 21 for provision of CSD services.</p>